# **AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A method of treatment <u>for Type II</u> for diabetes and its complications and associated conditions, comprising administering compounds <u>selected from</u> of Formula (1) (Gibberellins)

wherein

 $R^1$  is H or a group  $-O-R^{20}$ , where  $R^{20}$  is H, a glycosylic ether group (glycoside ether),  $C_{1-6}$  alkyl group, or  $R^1$  together with  $R^2$  or  $R^{10}$  forms a bond ( $C_1-C_2$  or  $C_1-C_{10}$  double bond, respectively);

 $R^2$  is H or a group  $-O-R^{21}$ , where  $R^{21}$  is H, a glycosylic ether group (glycoside ether), or together with  $R^4$  forms a bond (lactone) or  $R^2$  together with  $R^1$  or  $R^3$  forms a bond ( $C_1-C_2$  or  $C_2-C_3$  double bond, respectively);

 $R^3$  is H, =O, or  $-O-R^{22}$ , where  $R^{22}$  is H or a glycosylic ether group (glycoside ether), or  $R^3$  together with  $R^2$  forms a bond ( $C_2-C_3$  double bond);

 $R^4$  is OH, or  $-OR^{23}$ , where  $R^{23}$  is unsubstituted or substituted  $C_{1\sim20}$  alkyl, allyl, aryl, arylalkyl, amidine,  $-NR^{24}R^{25}$  or an unsaturated or saturated ring containing one or more hetero-atoms selected from the group consisting of nitrogen, oxygen and sulfur;  $R^{24}$  and  $R^{25}$  may or may not be the same, are hydrogen, or  $C_{1\sim20}$  alkyl, allyl, aryl, arylalkyl or an unsaturated or saturated ring containing one or more hetero-atoms selected from the group consisting of nitrogen, oxygen and sulphur; or  $R^4$  together with  $R^{21}$  or  $R^{28}$  forms a bond (lactone);

 $R^5$  is H or a glycosylic ester (glycoside ester) group, or unsubstituted or substituted  $C_{1\sim20}$  alkyl esters, allyl esters, aryl esters, arylalkyl esters, active esters;

R<sup>6</sup> is H or OH or together with R<sup>7</sup> forms a bond (C<sub>11</sub>-C<sub>12</sub> double bond);

 $R^7$  is H, =O, or  $-OR^{26}$ , where  $R^{26}$  is H or a glycosylic ether group (glycoside ether) or  $R^7$  together with  $R^6$  forms a bond ( $C_{11}$ - $C_{12}$  double bond);

 $R^8$  is H, hydroxyl, mercaptan, or halogen, amino, azido,  $NR^{24}R^{25}$ , unsubstituted or substituted  $C_{1\sim20}$  alkyl, allyl, aryl, or arylalkyl, or  $-OR^{27}$ , where  $R^{27}$  is a glycosylic ether group (glycoside ether);

R<sup>9</sup> is H or OH, or together with R<sup>15</sup> forms a bond (C<sub>9</sub>-C<sub>15</sub> bond);

 $R^{10}$  is H, CH<sub>3</sub>, CHO, COOH, or a glycosylic ester (glycoside ester) of said COOH,  $CH_2O-R^{28}$  or  $-OR^{28}$ , where  $R^{28}$  is H or together with  $R^4$  forms a bond (lactone) or  $R^{10}$  together with  $R^1$  forms a bond ( $C_1-C_{10}$  double bond);

R<sup>11</sup> is H, or OH or is absent;

R<sup>12</sup> is CH<sub>3</sub>, CH<sub>2</sub>OH, COOH or a glycosylic ester (glycoside ester) of said COOH;

 $R^{13}$  is methylene, or a divalent hetero-atom, or  $NR^{29}$ , where  $R^{29}$  is  $NHR^{30}$  or  $OR^{30}$  where  $R^{30}$  is H, or  $C_{1\sim20}$  alkyl, aryl, alkylaryl; and a double bond is present between  $C_{16}$  and  $R^{13}$  when  $R^{11}$  is absent; or  $R^{13}$  is H, OH,  $CH_3$  CHO,  $CH_2X$ , where X is halogen,  $CHNR^{29}$  where  $R^{29}$  is  $NHR^{30}$  or  $OR^{30}$  where  $R^{30}$  is H, or  $C_{1\sim20}$  alkyl, aryl, alkylaryl when  $R^{11}$  is H or OH; with the proviso that where  $R^{11}$  is OH,  $R^{13}$  is not OH;

R<sup>14</sup> is H or OH;

R<sup>15</sup> is H, or together with R<sup>9</sup> forms a bond (C<sub>9</sub>-C<sub>15</sub> bond);

<u>and its</u> and/or pharmaceutically acceptable <u>lactones</u>, <u>esters</u>, <u>active esters</u>, <u>salts</u> and <u>organic bases</u>, <u>derivatives</u> to a patient in need thereof.

- 2. (Original) The method of claim 1, wherein the complications and associated conditions of diabetes are one or more of: obesity, micro and macro vascular diseases, nephropathy, neuropathy, eye diseases, and diabetic ulcerations.
  - 3. (Original) The method of claim 1, wherein the Gibberellins are Gibberellin  $A_3$ .
- 4. (Original) The method of claim 1, wherein the Gibberellins are a mixture of Gibberellin A<sub>3</sub> and Gibberellin A<sub>4</sub> and/or Gibberellin A<sub>7</sub>.
- 5. (Currently amended) The method of claim 1, wherein the pharmaceutically acceptable derivatives are salts are selected from including alkali metal salts, alkaline earth metal salts, metal, and salts of ammonium [[,]] or organic bases.

6. (Original) The method of claim 5, wherein the organic bases are lidocaine, or  $NR^{16} R^{17} R^{18} R^{19}$ , where  $R^{16}$ ,  $R^{17}$ ,  $R^{18}$ ,  $R^{19}$ , which may be the same or not the same, are hydrogen, or substituted or unsubstituted  $C_{1\sim20}$  alkyl, alkanol, or aryl groups.

# 7. (Canceled)

8. (Currently amended) A method of treatment <u>for Type II</u> of diabetes and <u>its</u>

<u>complications and associated</u> related conditions comprising administering <del>an</del>

<u>effective amount of a compound selected from of formula (1) (Gibberellins)</u>

$$R^{2}$$
 $R^{10}$ 
 $R^{15}$ 
 $R^{15}$ 
 $R^{10}$ 
 $R^{10}$ 

## wherein

 $R^1$  is H or a group  $-O-R^{20}$ , where  $R^{20}$  is H, a glycosylic ether group (glycoside ether),  $C_{1-6}$  alkyl group, or  $R^1$  together with  $R^2$  or  $R^{10}$  forms a bond ( $C_1-C_2$  or  $C_1-C_{10}$  double bond, respectively);

 $R^2$  is H or a group  $-O-R^{21}$ , where  $R^{21}$  is H, a glycosylic ether group (glycoside ether), or together with  $R^4$  forms a bond (lactone) or  $R^2$  together with  $R^1$  or  $R^3$  forms a bond ( $C_1-C_2$  or  $C_2-C_3$  double bond, respectively);

 $R^3$  is H, =O, or  $-O-R^{22}$ , where  $R^{22}$  is H or a glycosylic ether group (glycoside ether), or  $R^3$  together with  $R^2$  forms a bond ( $C_2-C_3$  double bond);

 $R^4$  is OH, or  $-OR^{23}$ , where  $R^{23}$  is unsubstituted or substituted  $C_{1\sim20}$  alkyl, allyl, aryl, arylalkyl, amidine,  $-NR^{24}R^{25}$  or an unsaturated or saturated ring containing one or more hetero-atoms selected from the group consisting of nitrogen, oxygen and sulfur;  $R^{24}$  and  $R^{25}$  may or may not be the same, are hydrogen, or  $C_{1\sim20}$  alkyl, allyl, aryl, arylalkyl or an unsaturated or saturated ring containing one or more hetero-atoms selected from the group consisting of nitrogen, oxygen and sulphur; or  $R^4$  together with  $R^{21}$  or  $R^{28}$  forms a bond (lactone);

 $R^5$  is H or a glycosylic ester (glycoside ester) group, or unsubstituted or substituted  $C_{1\sim20}$  alkyl esters, allyl esters, aryl esters, arylalkyl esters, active esters;

R<sup>6</sup> is H or OH or together with R<sup>7</sup> forms a bond (C<sub>11</sub>-C<sub>12</sub> double bond);

 $R^7$  is H, =O, or  $-OR^{26}$ , where  $R^{26}$  is H or a glycosylic ether group (glycoside ether) or  $R^7$  together with  $R^6$  forms a bond ( $C_{11}$ - $C_{12}$  double bond);

 $R^8$  is H, hydroxyl, mercaptan, or halogen, amino, azido,  $NR^{24}R^{25}$ , unsubstituted or substituted  $C_{1\sim20}$  alkyl, allyl, aryl, or arylalkyl, or  $-OR^{27}$ , where  $R^{27}$  is a glycosylic ether group (glycoside ether);

R<sup>9</sup> is H or OH, or together with R<sup>15</sup> forms a bond (C<sub>9</sub>-C<sub>15</sub> bond);

 $R^{10}$  is H, CH<sub>3</sub>, CHO, COOH, or a glycosylic ester (glycoside ester) of said COOH,  $CH_2O-R^{28}$  or  $-OR^{28}$ , where  $R^{28}$  is H or together with  $R^4$  forms a bond (lactone) or  $R^{10}$  together with  $R^1$  forms a bond ( $C_1-C_{10}$  double bond);

R<sup>11</sup> is H, or OH or is absent;

R<sup>12</sup> is CH<sub>3</sub>, CH<sub>2</sub>OH, COOH or a glycosylic ester (glycoside ester) of said COOH;

 $R^{13}$  is methylene, or a divalent hetero-atom, or  $NR^{29}$ , where  $R^{29}$  is  $NHR^{30}$  or  $OR^{30}$  where  $R^{30}$  is H, or  $C_{1\sim20}$  alkyl, aryl, alkylaryl; and a double bond is present between  $C_{16}$  and  $R^{13}$  when  $R^{11}$  is absent; or  $R^{13}$  is H, OH,  $CH_3$  CHO,  $CH_2X$ , where X is halogen,  $CHNR^{29}$  where  $R^{29}$  is  $NHR^{30}$  or  $OR^{30}$  where  $R^{30}$  is H, or  $C_{1\sim20}$  alkyl, aryl, alkylaryl when  $R^{11}$  is H or OH; with the proviso that where  $R^{11}$  is OH,  $R^{13}$  is not OH;

R<sup>14</sup> is H or OH:

 $R^{15}$  is H, or together with  $R^9$  forms a bond (C<sub>9</sub>-C<sub>15</sub> bond);

and its pharmaceutically acceptable <u>lactones</u>, <u>esters</u>, <u>active esters</u>, <u>salts and organic bases</u>, <u>derivatives</u>

in combination with other compatible therapeutic agents selected from the group consisting of analgesics, anti-hypertensive agents, sedatives, hypnotics, lipid-lowering agents, and anti-infective agents or combinations thereof, to a patient in need thereof.

- 9. (Currently Amended) A method according to claim 11 [[8]], wherein the Gibberellins are Gibberellin A<sub>3</sub>.
- 10. (Currently Amended) A method according to claim 11 [[8]], wherein the Gibberellins are a mixture of Gibberellin A<sub>3</sub> and Gibberellin A<sub>4</sub> and/or Gibberellin A<sub>7</sub>.
- 11. (Currently amended) A method of treatment <u>for Type I and Type II</u> ef diabetes and <u>its complications and associated</u> related conditions comprising administering compounds <u>selected from</u> ef formula (1) (Gibberellins)

$$R^{2}$$
 $R^{10}$ 
 $R^{10}$ 
 $R^{15}$ 
 $R^{10}$ 
 $R^{15}$ 
 $R^{10}$ 
 $R^$ 

## wherein

 $R^1$  is H or a group  $-O-R^{20}$ , where  $R^{20}$  is H, a glycosylic ether group (glycoside ether),  $C_{1\sim6}$  alkyl group, or  $R^1$  together with  $R^2$  or  $R^{10}$  forms a bond ( $C_1-C_2$  or  $C_1-C_{10}$  double bond, respectively);

 $R^2$  is H or a group  $-O-R^{21}$ , where  $R^{21}$  is H, a glycosylic ether group (glycoside ether), or together with  $R^4$  forms a bond (lactone) or  $R^2$  together with  $R^1$  or  $R^3$  forms a bond ( $C_1-C_2$  or  $C_2-C_3$  double bond, respectively);

 $R^3$  is H, =O, or  $-O-R^{22}$ , where  $R^{22}$  is H or a glycosylic ether group (glycoside ether), or  $R^3$  together with  $R^2$  forms a bond ( $C_2-C_3$  double bond);

 $R^4$  is OH, or  $-OR^{23}$ , where  $R^{23}$  is unsubstituted or substituted  $C_{1\sim20}$  alkyl, allyl, aryl, arylalkyl, amidine,  $-NR^{24}R^{25}$  or an unsaturated or saturated ring containing one or more hetero-atoms selected from the group consisting of nitrogen, oxygen and sulfur;  $R^{24}$  and  $R^{25}$  may or may not be the same, are hydrogen, or  $C_{1\sim20}$  alkyl, allyl, aryl, arylalkyl or an unsaturated or saturated ring containing one or more hetero-atoms selected from the group consisting of nitrogen, oxygen and sulphur; or  $R^4$  together with  $R^{21}$  or  $R^{28}$  forms a bond (lactone);

 $R^5$  is H or a glycosylic ester (glycoside ester) group, or unsubstituted or substituted  $C_{1-20}$  alkyl esters, allyl esters, aryl esters, arylalkyl esters, active esters;

R<sup>6</sup> is H or OH or together with R<sup>7</sup> forms a bond (C<sub>11</sub>-C<sub>12</sub> double bond);

 $R^7$  is H, =O, or  $-OR^{26}$ , where  $R^{26}$  is H or a glycosylic ether group (glycoside ether) or  $R^7$  together with  $R^6$  forms a bond ( $C_{11}$ - $C_{12}$  double bond);

 $R^8$  is H, hydroxyl, mercaptan, or halogen, amino, azido,  $NR^{24}R^{25}$ , unsubstituted or substituted  $C_{1\sim20}$  alkyl, allyl, aryl, or arylalkyl, or  $-OR^{27}$ , where  $R^{27}$  is a glycosylic ether group (glycoside ether);

R<sup>9</sup> is H or OH, or together with R<sup>15</sup> forms a bond (C<sub>9</sub>-C<sub>15</sub> bond);

 $R^{10}$  is H, CH<sub>3</sub>, CHO, COOH, or a glycosylic ester (glycoside ester) of said COOH,  $CH_2O-R^{28}$  or  $-OR^{28}$ , where  $R^{28}$  is H or together with  $R^4$  forms a bond (lactone) or  $R^{10}$  together with  $R^1$  forms a bond ( $C_1-C_{10}$  double bond);

R<sup>11</sup> is H, or OH or is absent;

R<sup>12</sup> is CH<sub>3</sub>, CH<sub>2</sub>OH, COOH or a glycosylic ester (glycoside ester) of said COOH;

 $R^{13}$  is methylene, or a divalent hetero-atom, or  $NR^{29}$ , where  $R^{29}$  is  $NHR^{30}$  or  $OR^{30}$  where  $R^{30}$  is H, or  $C_{1\sim20}$  alkyl, aryl, alkylaryl; and a double bond is present between  $C_{16}$  and  $R^{13}$  when  $R^{11}$  is absent; or  $R^{13}$  is H, OH,  $CH_3$  CHO,  $CH_2X$ , where X is halogen,  $CHNR^{29}$  where  $R^{29}$  is  $NHR^{30}$  or  $OR^{30}$  where  $R^{30}$  is H, or  $C_{1\sim20}$  alkyl, aryl, alkylaryl when  $R^{11}$  is H or OH; with the proviso that where  $R^{11}$  is OH,  $R^{13}$  is not OH;

R<sup>14</sup> is H or OH;

R<sup>15</sup> is H, or together with R<sup>9</sup> forms a bond (C<sub>9</sub>-C<sub>15</sub> bond);

and or their pharmaceutically acceptable <u>lactones</u>, <u>esters</u>, <u>active esters</u>, <u>salts and</u> <u>organic bases derivatives</u>,

in combination with substances selected from the group consisting of insulin, its fragment derivatives, IGFs, growth factors, and other pharmaceutically compatible anti-diabetic agents, or combinations thereof, to a patient in need thereof.

12. (Currently amended) A method of treatment <u>for Type I and Type II</u> ef diabetes and <u>its complications and associated</u> related conditions comprising administering compounds <u>selected from</u> ef formula (1) (Gibberellins)

$$R^{2}$$
 $R^{10}$ 
 $R^{10}$ 
 $R^{15}$ 
 $R^{10}$ 
 $R^{15}$ 
 $R^{10}$ 
 $R^{11}$ 
 $R^{11}$ 
 $R^{11}$ 
 $R^{11}$ 
 $R^{11}$ 
 $R^{11}$ 

#### wherein

 $R^1$  is H or a group  $-O-R^{20}$ , where  $R^{20}$  is H, a glycosylic ether group (glycoside ether),  $C_{1\sim6}$  alkyl group, or  $R^1$  together with  $R^2$  or  $R^{10}$  forms a bond ( $C_1-C_2$  or  $C_1-C_{10}$  double bond, respectively);

 $R^2$  is H or a group  $-O-R^{21}$ , where  $R^{21}$  is H, a glycosylic ether group (glycoside ether), or together with  $R^4$  forms a bond (lactone) or  $R^2$  together with  $R^1$  or  $R^3$  forms a bond ( $C_1-C_2$  or  $C_2-C_3$  double bond, respectively);

 $R^3$  is H, =O, or  $-O-R^{22}$ , where  $R^{22}$  is H or a glycosylic ether group (glycoside ether), or  $R^3$  together with  $R^2$  forms a bond ( $C_2-C_3$  double bond);

 $R^4$  is OH, or  $-OR^{23}$ , where  $R^{23}$  is unsubstituted or substituted  $C_{1\sim20}$  alkyl, allyl, aryl, arylalkyl, amidine,  $-NR^{24}R^{25}$  or an unsaturated or saturated ring containing one or more hetero-atoms selected from the group consisting of nitrogen, oxygen and sulfur;  $R^{24}$  and  $R^{25}$  may or may not be the same, are hydrogen, or  $C_{1\sim20}$  alkyl, allyl, arylalkyl or an unsaturated or saturated ring containing one or more hetero-atoms selected from the group consisting of nitrogen, oxygen and sulphur; or  $R^4$  together with  $R^{21}$  or  $R^{28}$  forms a bond (lactone);

 $R^5$  is H or a glycosylic ester (glycoside ester) group, or unsubstituted or substituted  $C_{1\sim20}$  alkyl esters, allyl esters, aryl esters, arylalkyl esters, active esters;

 $R^6$  is H or OH or together with  $R^7$  forms a bond ( $C_{11}$ - $C_{12}$  double bond);

 $R^7$  is H, =O, or  $-OR^{26}$ , where  $R^{26}$  is H or a glycosylic ether group (glycoside ether) or  $R^7$  together with  $R^6$  forms a bond ( $C_{11}$ - $C_{12}$  double bond);

 $R^8$  is H, hydroxyl, mercaptan, or halogen, amino, azido,  $NR^{24}R^{25}$ , unsubstituted or substituted  $C_{1\sim20}$  alkyl, allyl, aryl, or arylalkyl, or  $-OR^{27}$ , where  $R^{27}$  is a glycosylic ether group (glycoside ether);

R<sup>9</sup> is H or OH, or together with R<sup>15</sup> forms a bond (C<sub>9</sub>-C<sub>15</sub> bond);

 $R^{10}$  is H, CH<sub>3</sub>, CHO, COOH, or a glycosylic ester (glycoside ester) of said COOH, CH<sub>2</sub>O- $R^{28}$  or  $-OR^{28}$ , where  $R^{28}$  is H or together with  $R^4$  forms a bond (lactone) or  $R^{10}$  together with  $R^1$  forms a bond (C<sub>1</sub>-C<sub>10</sub> double bond);

R<sup>11</sup> is H, or OH or is absent;

R<sup>12</sup> is CH<sub>3</sub>, CH<sub>2</sub>OH, COOH or a glycosylic ester (glycoside ester) of said COOH;

 $R^{13}$  is methylene, or a divalent hetero-atom, or  $NR^{29}$ , where  $R^{29}$  is  $NHR^{30}$  or  $OR^{30}$  where  $R^{30}$  is H, or  $C_{1\text{--}20}$  alkyl, aryl, alkylaryl; and a double bond is present between  $C_{16}$  and  $R^{13}$  when  $R^{11}$  is absent; or  $R^{13}$  is H, OH,  $CH_3$  CHO,  $CH_2X$ , where X is halogen,  $CHNR^{29}$  where  $R^{29}$  is  $NHR^{30}$  or  $OR^{30}$  where  $R^{30}$  is H, or  $C_{1\text{--}20}$  alkyl, aryl, alkylaryl when  $R^{11}$  is H or OH; with the proviso that where  $R^{11}$  is OH,  $R^{13}$  is not OH;

R<sup>14</sup> is H or OH:

R<sup>15</sup> is H, or together with R<sup>9</sup> forms a bond (C<sub>9</sub>-C<sub>15</sub> bond);

and its or their pharmaceutically acceptable lactones, esters, active esters, salts and organic bases derivatives,

in combination with <u>substances selected from the group consisting of insulin, its</u>
<u>fragment derivatives, IGFs, growth factors, and other pharmaceutically</u>
<u>compatible anti-diabetic agents, or combinations thereof, along with</u> other
compatible therapeutic agents selected from the group consisting of analgesics, antihypertensive agents, sedatives, hypnotics, lipid-lowering agents, and anti-infective
agents or combinations thereof, to a patient in need thereof.

13. (Currently amended) The method according to claim 11 [[1]], for the treatment of type 1 diabetes and its associated conditions.

- 14. (Currently amended) The method according to claim <u>11</u> [[1]], for the treatment of type 2 diabetes and its associated conditions.
- 15. (Currently amended) The method according to claim <u>14</u> [[1]], for the treatment of insulin resistant diabetes.
- 16. (Currently amended) The method according to claim 1, wherein the diabetic related complications and associated conditions [[,]] are chosen from obesity, micro and macro vascular diseases, nephropathy, neuropathy and eye diseases.
- 17. (Currently amended) An anti-diabetic agent <u>consisting essentially of</u> comprising a compound of formula (1)

$$R^{1}$$
 $R^{10}$ 
 $R^{15}$ 
 $R^{15}$ 
 $R^{15}$ 
 $R^{15}$ 
 $R^{10}$ 
 $R^{15}$ 
 $R^{11}$ 
 $R^{11}$ 
 $R^{11}$ 
 $R^{11}$ 

wherein

 $R^1$  is H or a group  $-O-R^{20}$ , where  $R^{20}$  is H, a glycosylic ether group (glycoside ether),  $C_{1-6}$  alkyl group, or  $R^1$  together with  $R^2$  or  $R^{10}$  forms a bond ( $C_1-C_2$  or  $C_1-C_{10}$  double bond, respectively);

 $R^2$  is H or a group  $-O-R^{21}$ , where  $R^{21}$  is H, a glycosylic ether group (glycoside ether), or together with  $R^4$  forms a bond (lactone) or  $R^2$  together with  $R^1$  or  $R^3$  forms a bond ( $C_1-C_2$  or  $C_2-C_3$  double bond, respectively);

 $R^3$  is H, =O, or -O- $R^{22}$ , where  $R^{22}$  is H or a glycosylic ether group (glycoside ether), or  $R^3$  together with  $R^2$  forms a bond ( $C_2$ - $C_3$  double bond);

 $R^4$  is OH, or  $-OR^{23}$ , where  $R^{23}$  is unsubstituted or substituted  $C_{1\sim20}$  alkyl, allyl, aryl, arylalkyl, amidine,  $-NR^{24}R^{25}$  or an unsaturated or saturated ring containing one or more hetero-atoms selected from the group consisting of nitrogen, oxygen and sulfur;  $R^{24}$  and  $R^{25}$  may or may not be the same, are hydrogen, or  $C_{1\sim20}$  alkyl, allyl, aryl, arylalkyl or an unsaturated or saturated ring containing one or more hetero-atoms selected from the group consisting of nitrogen, oxygen and sulphur; or  $R^4$  together with  $R^{21}$  or  $R^{28}$  forms a bond (lactone);

 $R^5$  is H or a glycosylic ester (glycoside ester) group, or unsubstituted or substituted  $C_{1\sim20}$  alkyl esters, allyl esters, aryl esters, arylalkyl esters, active esters;

R<sup>6</sup> is H or OH or together with R<sup>7</sup> forms a bond (C<sub>11</sub>-C<sub>12</sub> double bond);

 $R^7$  is H, =O, or  $-OR^{26}$ , where  $R^{26}$  is H or a glycosylic ether group (glycoside ether) or  $R^7$  together with  $R^6$  forms a bond (C<sub>11</sub>-C<sub>12</sub> double bond);

 $R^8$  is H, hydroxyl, mercaptan, or halogen, amino, azido,  $NR^{24}R^{25}$ , unsubstituted or substituted  $C_{1\sim20}$  alkyl, allyl, aryl, or arylalkyl, or  $-OR^{27}$ , where  $R^{27}$  is a glycosylic ether group (glycoside ether);

R<sup>9</sup> is H or OH, or together with R<sup>15</sup> forms a bond (C<sub>9</sub>-C<sub>15</sub> bond);

 $R^{10}$  is H, CH<sub>3</sub>, CHO, COOH, or a glycosylic ester (glycoside ester) of said COOH,  $CH_2O-R^{28}$  or  $-OR^{28}$ , where  $R^{28}$  is H or together with  $R^4$  forms a bond (lactone) or  $R^{10}$  together with  $R^1$  forms a bond ( $C_1-C_{10}$  double bond);

R<sup>11</sup> is H, or OH or is absent;

R<sup>12</sup> is CH<sub>3</sub>, CH<sub>2</sub>OH, COOH or a glycosylic ester (glycoside ester) of said COOH;

 $R^{13}$  is methylene, or a divalent hetero-atom, or  $NR^{29}$ , where  $R^{29}$  is  $NHR^{30}$  or  $OR^{30}$  where  $R^{30}$  is H, or  $C_{1\sim20}$  alkyl, aryl, alkylaryl; and a double bond is present between  $C_{16}$  and  $R^{13}$  when  $R^{11}$  is absent; or  $R^{13}$  is H, OH,  $CH_3$  CHO,  $CH_2X$ , where X is halogen,  $CHNR^{29}$  where  $R^{29}$  is  $NHR^{30}$  or  $OR^{30}$  where  $R^{30}$  is H, or  $C_{1\sim20}$  alkyl, aryl, alkylaryl when  $R^{11}$  is H or OH; with the proviso that where  $R^{11}$  is OH,  $R^{13}$  is not OH;

R<sup>14</sup> is H or OH;

R<sup>15</sup> is H, or together with R<sup>9</sup> forms a bond (C<sub>9</sub>-C<sub>15</sub> bond);

and/or its <u>pharmaceutically acceptable lactones</u>, <u>esters</u>, <u>active esters</u>, <u>salts and organic bases</u> derivatives as an active ingredient, together with a pharmaceutically acceptable carrier.

- 18. (Original) An anti-diabetic agent according to claim 17, wherein the agent is a medicament suitable for administration with a medicator.
- 19. (Currently amended) An anti-diabetic agent **consisting essentially of** comprising a compound of formula (1)

$$R^{2}$$
 $R^{10}$ 
 $R^{10}$ 
 $R^{15}$ 
 $R^{10}$ 
 $R^{15}$ 
 $R^{10}$ 
 $R^{15}$ 
 $R^{10}$ 
 $R^{15}$ 
 $R^{10}$ 
 $R^{15}$ 
 $R^{10}$ 
 $R^{15}$ 
 $R^{10}$ 
 $R^$ 

## wherein

 $R^1$  is H or a group  $-O-R^{20}$ , where  $R^{20}$  is H, a glycosylic ether group (glycoside ether),  $C_{1\sim6}$  alkyl group, or  $R^1$  together with  $R^2$  or  $R^{10}$  forms a bond ( $C_1-C_2$  or  $C_1-C_{10}$  double bond, respectively);

 $R^2$  is H or a group  $-O-R^{21}$ , where  $R^{21}$  is H, a glycosylic ether group (glycoside ether), or together with  $R^4$  forms a bond (lactone) or  $R^2$  together with  $R^1$  or  $R^3$  forms a bond ( $C_1-C_2$  or  $C_2-C_3$  double bond, respectively);

 $R^3$  is H, =O, or  $-O-R^{22}$ , where  $R^{22}$  is H or a glycosylic ether group (glycoside ether), or  $R^3$  together with  $R^2$  forms a bond ( $C_2-C_3$  double bond);

 $R^4$  is OH, or  $-OR^{23}$ , where  $R^{23}$  is unsubstituted or substituted  $C_{1\sim20}$  alkyl, allyl, aryl, arylalkyl, amidine,  $-NR^{24}R^{25}$  or an unsaturated or saturated ring containing one or more hetero-atoms selected from the group consisting of nitrogen, oxygen and sulfur;  $R^{24}$  and  $R^{25}$  may or may not be the same, are hydrogen, or  $C_{1\sim20}$  alkyl, allyl, aryl, arylalkyl or an unsaturated or saturated ring containing one or more hetero-atoms selected from the group consisting of nitrogen, oxygen and sulphur; or  $R^4$  together with  $R^{21}$  or  $R^{28}$  forms a bond (lactone);

 $R^5$  is H or a glycosylic ester (glycoside ester) group, or unsubstituted or substituted  $C_{1\sim20}$  alkyl esters, allyl esters, aryl esters, arylalkyl esters, active esters;

R<sup>6</sup> is H or OH or together with R<sup>7</sup> forms a bond (C<sub>11</sub>-C<sub>12</sub> double bond);

 $R^7$  is H, =O, or  $-OR^{26}$ , where  $R^{26}$  is H or a glycosylic ether group (glycoside ether) or  $R^7$  together with  $R^6$  forms a bond (C<sub>11</sub>-C<sub>12</sub> double bond);

 $R^8$  is H, hydroxyl, mercaptan, or halogen, amino, azido,  $NR^{24}R^{25}$ , unsubstituted or substituted  $C_{1\sim20}$  alkyl, allyl, aryl, or arylalkyl, or  $-OR^{27}$ , where  $R^{27}$  is a glycosylic ether group (glycoside ether);

R<sup>9</sup> is H or OH, or together with R<sup>15</sup> forms a bond (C<sub>9</sub>-C<sub>15</sub> bond);

 $R^{10}$  is H, CH<sub>3</sub>, CHO, COOH, or a glycosylic ester (glycoside ester) of said COOH,  $CH_2O-R^{28}$  or  $-OR^{28}$ , where  $R^{28}$  is H or together with  $R^4$  forms a bond (lactone) or  $R^{10}$  together with  $R^1$  forms a bond ( $C_1-C_{10}$  double bond);

R<sup>11</sup> is H, or OH or is absent;

R<sup>12</sup> is CH<sub>3</sub>, CH<sub>2</sub>OH, COOH or a glycosylic ester (glycoside ester) of said COOH;

 $R^{13}$  is methylene, or a divalent hetero-atom, or  $NR^{29}$ , where  $R^{29}$  is  $NHR^{30}$  or  $OR^{30}$  where  $R^{30}$  is H, or  $C_{1\sim20}$  alkyl, aryl, alkylaryl; and a double bond is present between  $C_{16}$  and  $R^{13}$  when  $R^{11}$  is absent; or  $R^{13}$  is H, OH,  $CH_3$  CHO,  $CH_2X$ , where X is halogen,  $CHNR^{29}$  where  $R^{29}$  is  $NHR^{30}$  or  $OR^{30}$  where  $R^{30}$  is H, or  $C_{1\sim20}$  alkyl, aryl, alkylaryl when  $R^{11}$  is H or OH; with the proviso that where  $R^{11}$  is OH,  $R^{13}$  is not OH;

R<sup>14</sup> is H or OH;

R<sup>15</sup> is H, or together with R<sup>9</sup> forms a bond (C<sub>9</sub>-C<sub>15</sub> bond);

<u>organic bases</u> as an active ingredient, together with pharmaceutically acceptable carriers or excipients, wherein the agent is a slow release composition.

- 20. (Original) An anti-diabetic agent according to claim 17, wherein the agent is for oral administration.
- 21. (Original) An anti-diabetic agent according to claim 17, wherein the agent is for inhalation administration.
- 22. (Original) An anti-diabetic agent according to claim 17, wherein the agent is for transdermal administration.
- 23. (Original) An anti-diabetic agent according to claim 17, wherein the agent is for parenteral injection.
- 24. (Original) An anti-diabetic agent according to claim 17, wherein the agent is for topical, rectal, or vaginal administration.
  - 25. (Canceled)
- 26. (Currently amended) An anti-diabetic agent according to claim <u>17</u>, [[25]] wherein the <u>pharmaceutically acceptable salt</u> derivative is a sodium salt of formula (1).
- 27. (Currently amended) An anti-diabetic agent according to claim <u>17</u>, [[25]] wherein the <u>pharmaceutically acceptable salt</u> derivative is a zinc salt of formula (1).

- 28. (Currently amended) An anti-diabetic agent according to claim <u>17</u>, [[25]] wherein the <u>pharmaceutically acceptable ester</u> derivative is a ethyl ester of formula (1).
- 29. (Currently amended) A method of manufacturing an anti-diabetic agent according to claim 17, comprising combining a compound <u>selected from</u> of formula (1) <u>and and/or</u> its <u>pharmaceutically acceptable lactones</u>, <u>esters</u>, <u>active esters</u>, <u>salts</u> and <u>organic bases derivatives</u> with a pharmaceutically acceptable carrier.
- 30. (Withdrawn) A process for the preparation of Gibberellins including Gibberellin A<sub>3</sub>, including the steps of:
  - (a) incubating a Gibberellin-producing strain of microorganism in a fermentation broth;
  - (b) adjusting the pH of the fermentation broth to pH 6.5 to 7.0 and filtering to obtain a filter cake of microorganism mycelium, and a filtrate;
  - (c) washing the filter cake with water and combining the washing with the filtrate to form an aqueous solution;
  - (d) concentrating the aqueous solution;
  - (e) mixing the aqueous solution with an organic solvent at a temperature of 5 to 10°C and adjusting the pH of the mixture to less than 2.0;
  - (f) allowing the mixture to separate into an aqueous phase and a first organic phase and removing the first organic phase;
  - (g) re-extracting the aqueous phase from step (f) with organic solvent to obtain a second organic phase;
  - (h) combining the first and second organic phases and concentrating to form a concentrated organic solution;
  - (i) heating the concentrated organic solution at 60-70°C for 3 to 4 hours with stirring, until the precipitation of solid matter ceases;

- (j) cooling the concentrated organic solution to room temperature and filtering to obtain a precipitate;
- (k) washing the precipitate in cold organic solvent and drying to obtain an off-white solid containing about 80% Gibberellin A<sub>3</sub>, about 4% Gibberellin A<sub>4</sub> and about 4% Gibberellin A<sub>7</sub>.
  - 31. (Withdrawn) The process of claim 30, comprising the further steps of:
- (I) dissolving the off-white solid in a mixture of 32.6% methanol, 2.2% water and 65.2% acetone to obtain a Gibberellin solution;
- (m)diluting the Gibberellin solution with a 10:1 mixture of organic solvent and water;
- (n) filtering the diluted Gibberellin solution and concentrating the filtrate by vacuum evaporation;
- (o) heating the concentrate to a temperature of 60 to 80°C for 2 to 3 hours with stirring, cooling to room temperature and filtering to obtain a solid crystalline precipitate;
- (p) washing the precipitate with cold organic solvent and drying to obtain Gibberellin A<sub>3</sub> crystals.
- 32. (Withdrawn) A process according to claim 30 wherein the Gibberellin-producing strain of microorganism is *Gibberella fujikuroi*.
- 33. (Withdrawn) A process according to claim 30, wherein the concentration of the solutions in steps (d) and (h) is achieved using vacuum evaporation.
- 34. (Withdrawn) A process according to claim 30 wherein the organic solvent is ethyl acetate.
- 35. (Withdrawn) A process according to claim 31 wherein the organic solvent is ethyl acetate.

- 36. (Withdrawn) A process according to claim 31 comprising the further steps of:
  - (q) dissolving the Gibberellin A<sub>3</sub> in methanol;
  - (r) adding the Gibberellin solution to an equimolar aqueous solution of NaHCO<sub>3</sub>;
  - (s) evaporating the mixed solutions to dryness to obtain a solid residue;
  - (t) dissolving the residue in water and freeze drying to obtain Gibberellin A<sub>3</sub> sodium salt.
- 37. (Withdrawn) A process according to claim 36, comprising the further steps of dissolving the Gibberellin  $A_3$  sodium salt in water, passing the solution through a column loaded with a zinc ion-exchange resin, washing the column with water, collecting and combining the effluent and washings and removing the water to obtain Gibberellin  $A_3$  zinc salt.
- 38. (Withdrawn) A process according to claim 31 comprising the further steps of:
  - (q) dissolving the Gibberellin A<sub>3</sub> in a 50:1 ratio mixture of acetone to water;
  - (r) mixing the Gibberellin A<sub>3</sub> solution with equimolar amounts of triethylamine and ethyl chloroformate, and a one tenth molar amount of N-methyl morpholine, and stirring at -15°C for 20 minutes;
  - (s) diluting the resultant mixture with anhydrous ethanol and stirring at room temperature;
  - (t) evaporating the diluted mixture to dryness and partitioning the residue between ethyl acetate and water in a 6:1 ratio;

separating the ethyl acetate layer, washing with 2% HCI, followed by water,

followed by 5% NaHCO<sub>3</sub>, followed by water, and evaporating under reduced pressure to dryness to give Gibberellin A<sub>3</sub> ethyl ester.

- 39. (New) The method of claim 11, wherein the complications and associated conditions of diabetes are one or more of: obesity, micro and macro vascular diseases, nephropathy, neuropathy, eye diseases, and diabetic ulcerations.
- 40. (New) The method of claim 11, wherein the pharmaceutically acceptable salts are selected from alkali metal salts, alkaline earth metal salts, metal, and salts of ammonium or organic bases.
- 41. (New) The method of claim 40, wherein the organic bases are lidocaine, or  $NR^{16} R^{17} R^{18} R^{19}$ , where  $R^{16}$ ,  $R^{17}$ ,  $R^{18}$ ,  $R^{19}$ , which may be the same or not the same, are hydrogen, or substituted or unsubstituted  $C_{1\sim20}$  alkyl, alkanol, or aryl groups.